Fish Culture

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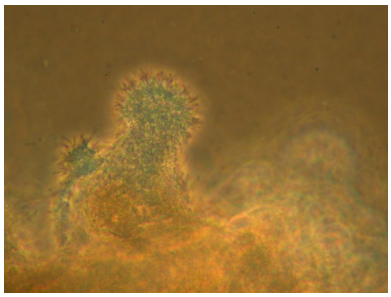

Better Disease Management in Fish Production

Diseases in our fish hatcheries can lead to mortality and reduced growth rates which reduce efficiency and limit numbers and quality of fish produced for Iowa's fisheries. Effective disease management and treatment is therefore essential. In 2006, we initiated a new project so that we could dedicate more attention to obtaining approved drugs for hatcheries. Additionally, we are concentrating effort to improve prevention and management of a commonly occurring disease in our walleye production, Ich.

Rathbun Fish hatchery uses raw lake water that has not been disinfected, a process that reduces the influx of fish diseases into the walleye grow-out tanks. During growout of walleye, Ich infections are almost a certainty and are currently addressed by prophylactic treatments with formalin. Formalin treatments are very effective, but add significantly to the cost of walleye production, yet the cost of disinfecting lake water to reduce the use of formalin is prohibitive.

Research-scale experiments conducted in 2006 and 2008 show that there is potential to reduce formalin use through an alternate treatment regime of 5 treatments per week and close monitoring of Ich infection levels. In 2008, hatchery staff monitored Ich infestation in production lots of walleye that received daily formalin treatment during growout. They found Ich levels on walleye to be well below 15 cells per arch throughout the grow-out period. These findings show that the same therapy regime in production and research-scale culture systems resulted in very different Ich infection rates, with research scale being the worst case scenario.

In 2010, we evaluated an alternate treatment regime in three production tanks of walleye that consisted of a base prophylactic treatment of alternate day formalin application and when 15 or more Ich cells were counted on one gill arch, formalin treatment increased to daily treatments. This seven day per week Ich eradication regime continued until Ich presence was zero or one cell per gill arch, then the alternate day treatments resumed. This group was compared to three production tanks that were treated five days per week with formalin, a treatment method proven to be effective in 2009.

The tanks in the every-other-day treatment each had Ich infections that required daily formalin treatment to reduce the infection to acceptable levels. No mortality was observed in the test lots, therefore the Ich was effectively controlled. The formalin expense to prevent or treat Ich infection was reduced by $104 per tank as a result of treating every other day rather than five days per week. It would seem that a larger savings would be achieved with every other day treatment, however, Ich infections in that treatment were more severe requiring more treatments. This study has greatly changed how Ich is treated and continues to garner knowledge that assists hatchery staff reduce production costs of large walleye fingerlings.